

CLAIM AMENDMENTS

Claims 1 through 28 (canceled)

29. (Currently amended) [[A]] An isolated nucleotide sequence nucleic acid from the gene SdaA according to SEQ ID NO: 1, isolated from and replicatable in a microorganism of the family Corynebacteria, and which encodes L-serine dehydratase, ~~but having except that~~ nucleotides from position 506 to position 918 have been completely ~~or partially~~ deleted, ~~or mutated so that said nucleotide sequence nucleic acid, when incorporated into a microorganism of the family Corynebacteria, in a culture medium containing the microorganism of the family Corynebacteria, expresses wherein said nucleic acid encodes an~~ L-serine dehydratase ~~to a lesser extent than the naturally occurring nucleotide sequence according to SEQ ID NO: 1, or does not express L-serine dehydratase at all~~ no longer having reduced enzymatic activity when compared to the enzymatic activity of the L-serine dehydratase of SEQ ID NO:2 under the same conditions, thereby preventing enzymatic degradation of the L-serine to pyruvate following microbial production of L-serine from a carbohydrate.

30. (canceled)

1 31. (Currently amended) ~~A gene structure containing at~~
2 ~~least one~~ The nucleotide sequence nucleic acid from the gene sdaA
3 according to claim 29, ~~[[said]] wherein the~~ nucleotide sequence of
4 said nucleic acid having is operably linked to a regulatory
5 sequence ~~operatively linked thereto.~~

32. (canceled)

1 33. (Currently amended) ~~A vector containing at least one~~
2 ~~gene structure~~ comprising the nucleic acid from the gene sdaA
3 according to claim 31.

34. (canceled)

1 35. (Currently amended) A recombinant microorganism
2 belonging to the family Corynebacteria, ~~whose genome includes~~
3 wherein said microorganism comprises a series of endogenous SerA-
4 fbr, SerB and SerC genes, ~~Corynebacteria serine biosynthesis genes,~~
5 ~~which express enzymes that catalyze the synthesis of L-serine from~~
6 ~~a carbohydrate in a culture medium containing the microorganism of~~
7 ~~the family Corynebacteria, and which further includes an endogenous~~
8 ~~according to SEQ ID NO: 1 which encodes L-serine dehydratase, but~~
9 ~~having nucleotides from position 506 to position 918 completely or~~
10 ~~partially deleted, or mutated so that said nucleotide sequence,~~
11 ~~homologously recombined into the genome of the microorganism of the~~

12 family Corynebacteria, between nucleotide sequences SEQ ID NO: 3
13 and SEQ ID NO: 6 respectively flanking the 5' and 3' ends of said
14 endogenous nucleotide sequence in a culture medium containing said
15 recombinant microorganism of the family Corynebacteria, expresses
16 L-serine dehydratase to a lesser extent than the naturally
17 occurring L-serine dehydratase expressed according to SEQ ID NO: 1,
18 or does not express L-serine dehydratase at all, thereby preventing
19 enzymatic degradation of the L-serine to pyruvate following the
20 microbial production of L-serine from a carbohydrate wherein said
21 recombinant microorganism is obtained by introducing a modification
22 within an sdaA gene encoding an L-serine dehydratase via homologous
23 recombination, wherein said sdaA gene prior to being modified
24 comprises SEQ ID NO: 1, wherein the modification is made between
25 nucleotides 506 and 918 of SEQ ID NO:1, wherein the modification is
26 the complete deletion of nucleotides 506 to 918 of SEQ ID NO: 1,
27 and wherein the modified L-serine dehydratase sdaA gene is not
28 expressed in the recombinant microorganism at all.

36. (canceled)

1 37. (Currently amended) The recombinant microorganism
2 defined in claim 36 claim 35 belonging to the family
3 Corynebacteria, wherein the microorganism is Corynebacterium
4 Glutamicum of the strain 13032ApanBCsdaApSerAforCB.

38. (canceled)

39. (currently amended) A probe for identifying and/or isolating ~~a nucleotide sequence that is the polynucleotide of~~ SEQ ID NO: 1 ~~nucleic acid which encodes L-serine dehydratase, an endogenous enzyme in microorganisms of the Corynebacteria family, which enzymatically degrades L-serine, microbially produced from a carbohydrate in a culture medium containing the microorganisms of the Corynebacteria family,~~ wherein the probe is a nucleotide sequence nucleic acid selected from the group consisting of:
TCGTGCAACTTCAGACTC (SEQ ID NO:3);
CCCATCCACTAAACTTAAACACGTCATAATGAACCCACC (SEQ ID NO:4);
TGTTTAAGTTTACTGGATGGGCCGACTAATGGTGCTGCG (SEQ ID NO:5); and
CGGGAAGCCCAAGGTGGT (SEQ ID NO:6).

40. (new) A recombinant microorganism belonging to the family Corynebacteria, wherein said microorganism comprises endogenous SerA-fbr, SerB and SerC genes, wherein said recombinant microorganism is obtained by introducing a modification within an sdaA gene encoding an L-serine dehydratase via homologous recombination, wherein said sdaA gene prior to being modified comprises SEQ ID NO: 1, wherein the modification is made between nucleotides 506 and 918 of SEQ ID NO:1, wherein the modification is the complete deletion of nucleotides 506 to 918 of SEQ ID NO: 1,

10 and wherein following the modification, L-serine dehydratase is not
11 expressed in the recombinant microorganism at all.

1 41. (new) A recombinant microorganism belonging to the
2 family Corynebacteria, wherein said microorganism comprises
3 endogenous SerA-fbr, SerB and SerC genes, wherein said recombinant
4 microorganism is obtained by completely deleting the L-serine
5 dehydratase sdaA gene by directed recombination, wherein said L-
6 serine dehydratase sdaA gene comprises SEQ ID NO: 1, and wherein
7 following deletion of the L-serine dehydratase sdaA gene, L-serine
8 dehydratase is not expressed in the recombinant microorganism at
9 all.